



October 24, 2022

Ms. Rajinder Sahota  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

**Subject: Comments on the Recirculated Environmental Analysis (EA) for the 2022 Scoping Plan Update**

Dear Ms. Sahota:

The California Manufacturers & Technology Association (CMTA) is writing to express our concerns and objections to a recent modification in the California Air Resources Board's (CARB) 2022 Scoping Plan Recirculated EA relating to aviation. CMTA has continued to be an active stakeholder throughout the Scoping Plan development process and has appreciated the opportunities to provide substantive feedback when appropriate. As the manufacturing sector stakeholder, we have participated in every Scoping Plan workshop - including those that focused on transportation and low-carbon fuels. To date, our combined industry has never been tasked with achieving a 20 percent electrification or hydrogen goal for aviation by 2045. We are dismayed that CARB would include such a target without first providing California's aerospace manufacturers, private pilots, and those manufacturing sustainable aviation fuels the opportunity to opine on the feasibility, engineering challenges and scope of this new target.

#### **CARB's Proposed Scenario - 2022 Draft Scoping Plan**

CARB's proposed scenario for the aviation sector includes a 10 percent target for aviation fuel demand to be met via electricity (batteries) or hydrogen (fuel cells) by 2045.<sup>1</sup> CARB has acknowledged that demand of finished fossil fuels will continue into 2045, and specifically within the transportation sectors that are directly subject to federal regulation – including interstate locomotives, marine and aviation. The Draft Scoping Plan provides further recognition that to achieve the emissions reductions from aviation specifically, that sustainable aviation fuel (SAF) is envisioned to be a significant component to California's low-carbon future.

#### **CARB's Recirculated EA – 2022 Draft Scoping Plan**

CARB's Recirculated EA for the proposed scenario and for the aviation sector now includes a 20 percent target for aviation fuel demand to be met via electricity (batteries) or hydrogen (fuel cells) by 2045.<sup>2</sup> We are also aware of Governor Newsom's July 22nd letter to CARB that, among other directives, requests the agency to "adopt an aggressive 20% clean fuels target for the aviation sector."

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<sup>1</sup> 2022 DRAFT Scoping Plan Update. Table 2-2: Actions for the Proposed Scenario: AB 32 GHG Inventory Sectors, pg. 58.

<sup>2</sup> 2022 DRAFT Scoping Plan Update: Recirculated Environmental Analysis. Table 2-1: Actions for the Proposed Scenario: AB 32 GHG Inventory Sectors, pg. 17.



### **Concerns and Objections**

CMTA must object to the 20 percent electrification and/or hydrogen target for aviation. Neither the administration, nor CARB, have provided adequate data, analysis, or public engagement opportunities to support establishing this new target. Aviation is unlike any other sector of transportation and requires far more collaboration with industry than what has currently been afforded. It is insufficient for CARB to establish an arbitrary target without a full understanding of the complexities surrounding electrified, or hydrogen, aviation. The aerospace manufacturers of our organization have not been consulted on this proposal, nor have we been asked to provide technical and engineering expertise as to how such a goal could be achieved.

It is exceptionally disappointing the CARB has chosen to ignore steps taken by industry to maximize technological innovations and gains of operational efficiency that result in less carbon emission. SAF is part of that solution and could achieve significant decarbonization, but SAF faces challenges associated with available supply and demands. A far more practical endeavor, CARB should instead focus on a pathway of incentives for SAF production and setting appropriate targets for its utilization. However, it appears that CARB and the administration would rather hamper efforts related to cleaner fuels by vetoing legislation such as Assembly Bill 1322 (Rivas, 2022).

In the interest of providing substantive feedback on CARB's proposal to electrify 20 percent of California aviation by 2045, we respectfully ask that CARB respond to various questions provided below:

1. Neither the Draft Scoping Plan, nor the Recirculated Environmental Analysis, provide adequate citation, data, evidence to support the increased target. What data, studies, or additional information has CARB utilized to establish the 20 percent target and determine its feasibility?
2. The term "aviation" is undefined. Does CARB intend to apply the 20 percent target to commercial aviation? Or is this more expansive to private pilots, military, emergency, state and local government aircraft?
3. Aviation fuels and aircraft design certification are regulated by Federal Aviation Administration. How does CARB intend to address challenges of federal preemption to both considerations?
4. Given that aviation electrification will require additional energy capacity and infrastructure at California's airports, has CARB updated the Scoping Plan to include energy and cost variables? Further, what estimates and/or analyses has CARB conducted to determine these new financial impacts and energy demands?
5. CARB has not identified a pathway for hydrogen development and greater utilization of SAF. How does CARB intend to incentivize the needed development of both fuels for use in aviation?
6. Has CARB considered safety in the estimation of the 2045 deadline? Given concerns about safety, particularly in the case of a thermal event occurring from a battery pack, safety standards for aircraft are far more stringent than for passenger vehicles.



7. Has CARB considered battery weight and energy density in the determination of feasibility to achieve 20 percent battery-powered aviation?

CMTA encourages CARB to collaborate with the aerospace industry. The challenges associated with this endeavor cannot be ignored and the Recirculated EA has largely oversimplified these challenges by mimicking what has already occurred with other ZEVs. We implore CARB to clarify the parameters of the 20 percent aviation target and its applicability to commercial, private, governmental or emergency flight. What has been proposed ignores some of the most basic engineering challenges facing aviation – that of weight and energy. There is limited power, charging resources, broader infrastructure challenges related to airports, and regulatory hurdles that are beyond the capabilities and authority of CARB.

We appreciate the opportunity to comment and look forward to a more deliberative and collaborative dialogue in the near future.

Respectfully,

Robert Spiegel  
Senior Policy Director, Government Relations